

HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

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	270 Hindi-Urdu	270 Hindi-Urdu	270 Hindi-Urdu
270	01 p	*[eng] [s-prenasalized] ⁶⁰	
270	02 p-long	30 s-long	55 m-long
270	03 p-aspirated ⁰¹	31 s-breathy voice ⁰¹ [s-prenasalized-breathy voice] ⁶⁰	56 m-breathy voice ^{01 41} [beta-approximant-breathy voice-nasalized] ⁶³ (free)
270	04 p-aspirated-long ⁰¹		
270	05 b [b-prenasalized] ⁶⁰	32 s-breathy voice-long ^{01 30}	57 n-dental [n-retroflex] ^{64 65}
270	06 b-long	33 q (loan)	*[r-flap-retroflex-nasalized/ [n-palatal] ⁶⁵ [long] ^{65 66} */g/
270	07 b-breathy voice ⁰¹ [b-prenasalized-breathy voice] ⁶⁰	34 q-long (loan)	58 n-dental-long
270	08 b-breathy voice-long ⁰¹	35 t/s-hacek ⁰³	59 n-dental-breathy voice ^{01 41}
270	09 t-dental	36 t/s-hacek-long ⁰³	60 l [l-nasalized] ⁶⁷
270	10 t-dental-long	37 t/s-hacek-aspirated ^{01 03}	61 l-long
270	11 t-dental-aspirated ⁰¹	38 t/s-hacek-aspirated-long ^{01 03}	62 l-breathy voice ^{01 41}
270	12 t-dental-aspirated-long ⁰¹	39 d/z-hacek ⁰³ [d/z-hacek-prenasalized] ⁶⁰	63 r-trill ⁰⁷
270	13 d-dental [d-dental-prenasalized] ⁶⁰	40 d/z-hacek-long ⁰³	64 r-trill-long
270	14 d-dental-long	41 d/z-hacek-breathy voice ^{01 03} [d/z-hacek-prenasalized-breathy voice] ⁶⁰	65 r-flap-retroflex-nasalized ⁴³ (allo,loan) *[d-retroflex/ *[n-retroflex]
270	15 d-dental-breathy voice ⁰¹ [d-dental-prenasalized-breathy voice] ⁶⁰	42 d/z-hacek-breathy voice-long ^{01 03}	
270	16 d-dental-breathy voice-long ⁰¹	43 f ³² (loan)	66 v-approximant [beta-approximant] ⁷⁵
270	17 t-retroflex ⁰²	44 f-long ³³ (loan)	[w] ⁶⁸ [v-approximant-nasalized] ⁶⁹
270	18 t-retroflex-long ⁰²	45 s	67 v-approximant-long
270	19 t-retroflex-aspirated ^{01 02}	46 s-long	68 glottal stop ⁴⁴ (loan)
270	20 t-retroflex-aspirated-long ^{01 02}	47 z ³³ (loan)	69 h-voice ⁰¹ [h] ⁷⁰ [h-voice-nasalized] ⁶⁹
270	21 d-retroflex ⁰² *[r-flap-retroflex-nasalized] [r-flap-retroflex] ⁶¹ [d-retroflex-prenasalized] ⁶⁰	48 z-long ³³ (loan)	
270	22 d-retroflex-long ⁰²	49 s-hacek ³⁶ (loan)	50 i-long ⁰⁸ [i-breathy voice-long] ⁷¹
270	23 d-retroflex-breathy voice ^{01 02} [r-flap-retroflex-breathy voice] ⁶¹ [d-retroflex-prenasalized-breathy voice] ⁶⁰	50 s-hacek-long (loan)	51 i-long-nasalized ^{08 09}
270	24 d-retroflex-breathy voice-long ^{01 02}	51 z-hacek ³⁸ (loan)	52 iota [e] ⁷² [iota-breathy voice] ⁷¹
270	25 k	52 x-uvular ^{05 33} (loan)	53 iota-nasalized ⁰⁹
270	26 k-long	53 gamma-uvular ^{06 33} (loan)	54 e-long ⁰⁸ [e-breathy voice-long] ⁷¹
270	27 k-aspirated ⁰¹		55 e-long-nasalized ^{08 09}
270	28 k-aspirated-long ⁰¹	54 m [beta-approximant-nasalized]	56 ash/e-glide [ash-long] ⁷³
270	29 g		

270 Hindi-Urdu	270 Hindi-Urdu	270 Hindi-Urdu
(free) [epsilon-dot/e-glide] ⁷³	63 u-long ⁰⁸ [u-breathy voice-long] ⁷¹	70 o-open/o-glide [o-open-long] ⁷³
(free) [ash/e-glide-breathy voice] ⁷¹	64 u-long-nasalized ^{08 09}	(free) [epsilon-dot/o-glide] ⁷³
270 57 ash/e-glide-nasalized ^{09 45} (limited)	65 upsilon [o] ⁷² [upsilon-breathy voice] ⁷¹	(free) [o-open/o-glide-breathy voice] ⁷¹
270 58 iota-bar ⁴⁶ (loan)	66 upsilon-nasalized ⁰⁹	71 o-open/o-glide-nasalized ^{09 45} (limited)
270 59 epsilon-dot [ash-breathy voice] ⁷⁴	67 o-long ⁰⁸ [o-breathy voice-long] ⁷¹	72 alpha-unrounded ⁴⁸ (loan)
270 60 epsilon-dot-nasalized ⁰⁹	68 o-long-nasalized ^{08 09}	73 yod [yod-nasalized] ⁶⁹
270 61 a-long ⁰⁸ [a-breathy voice-long] ⁷¹	69 o-open-breathy voice ⁴⁷ (limited)	74 yod-long
270 62 a-long-nasalized ^{08 09}		

270 \$a Hindi-Urdu \$A Hindi \$A Urdu \$A Hindustani \$A Khari Boli \$b Standard Hindi-Urdu \$d Indic \$e India; Pakistan \$f 60 million \$g Gary Holland \$g John Crothers (review)

270 \$a Kelkar, Ashok Ramchandra \$b 1968 \$c Studies in Hindi-Urdu I: Introduction and Word Phonology \$g Poona: Deccan College, Postgraduate and Research Institute \$q author is native speaker

270 \$a Vermeer, Hans J. and Aryendra Sharma \$b 1966 \$c Hindi-Lautlehre \$g Heidelberg: Julius Groos Verlag \$q coauthor is native speaker

270 \$a Pinnow, Heinz-Juergen \$b 1953 \$c Ueber die Vokale im Hindi \$d Zeitschrift fuer Phonetik und allgemeine Sprachwissenschaft 7.43-53

270 \$a Srivastava, R.N. \$b 1969 \$c review of Kelkar: Studies in Hindi-Urdu I. \$d Language, 45.913-927 \$s Criticizes Kelkar from generative standpoint. No additional data.

270 \$a ACCENT \$A In isolation every Hindi-Urdu word has a predictable accent, which phonetically "consists of extra length to the coda non-syllabics or (in case there is no coda) to the nucleus." Position of the main accent is determined by the heaviness of syllables. A "light" syllable ends in a short vowel; a medium syllable ends in a long vowel or short vowel followed by a single consonant; other combinations are heavy. The main accent falls on the heaviest syllable or on the next to last of several equally heavy syllables. A secondary accent falls on heavy syllables preceding the main accent; otherwise secondary accent falls on alternate syllables, reckoning from the main accent. (p.26f)

270 \$a BREATHINESS PROSODY \$A In some respects breathiness acts like a prosodic feature. In segmental terms the breathy phonemes are /h-voice/, the aspirated stops and the breathy voice consonants, but this feature expands beyond segmental boundaries. For one thing all vowels are allophonically breathy voice before /h-voice/ in the same syllable, and in rapid speech these fuse into a single breathy voice unit. The sequence /epsilon-dot.h-voice/ may simply become aspiration (breathy voice) on the preceding consonant. In some cases /h-voice/ may shift from post-vocalic to prevocalic position, becoming aspiration of the preceding consonant. Also, sequences of voiced consonant plus /h-voice/ may become breathy voice consonants. Finally, in less formal speech styles there is a type of Grassmann's Law by which the second aspirate in a word, whether it is /h-voice/ or a feature on a consonant, is dropped, leaving a single stretch of breathiness in the word.

270 \$a NASAL VOWEL PROSODY \$A If the last vowel in a sequence of vocoids (including vowels, glides, and /h-voice/) is nasalized partial nasalization extends through the whole sequence. (p.38)

270 \$a RETROFLEXED VOWELS (NON-DISTINCTIVE) \$A "A vowel adjacent to a tautosyllabic retroflex consonant is slightly retroflexed - also, 'iota, upsilon, epsilon-dot' are lower and 'a-long' is more retracted." (p.24f)

270 \$a SYLLABLE \$A (C)(G)V(C) \$A Word medially there are a few cases of syllable initial or final consonant clusters, involving "sequences of the type 'nnt, rtt, ttt'" which are not necessarily broken up by a transitional vowel. Otherwise the syllable canon holds true for all native words. (p.64ff)

270 01 \$A V & S say that aspiration is weak or lost altogether syllable finally. (p.24) Kelkar mentions this only for voiced aspirates (=breathy voice). (p.24) In any case there is great variability in aspiration. See note on breathiness prosody.

270 02 \$A According to Kelkar the retroflex stops are "postalveolar" for Hindi speakers, "cacuminal" for Urdu speakers. (p.23)

270 03 \$A The palatoalveolar affricates have no lip rounding. (V & S, p. ix)

270 04 \$A [s-retroflex] is "not a true retroflex, but more like [s-hacek] with the apex retracted and raised and with darker quality." (p.31)

270 05 \$A /x-uvular/ is "rather retracted and with uvular scrape." (p.32)

270 06 \$A /gamma-uvular/ is even more retracted than /x-uvular/. (p.32)

270 07 \$A /r-trill/ is "weakly trilled unless geminated." (p.24)

270 08 \$A Half-long variants of long vowels occur in the second syllable of disyllabic words, in all syllables of words of more than two syllables, and also prevocalically. (V & S, p.9) Kelkar says that the long vowels are progressively longer from high to low, and from front to back. (p.24)

270 09 \$A Pinnow (p.46) mentions that nasalized breathy voice vowels occur, but gives only one example.

270 30 \$A No example of /g-breathy voice-long/ is found in discussions of geminates by Kelkar (p.64ff) and Vermeer and Sharma (p.36ff, p.48f).

270 31 \$A /q/ is characteristic of Urdu. Uneducated Hindi speakers replace it with /k/. (p.31f; Vermeer and Sharma, p.4-5)

270 32 \$A /f/ is characteristic of Urdu. Uneducated Hindi speakers replace it with /p-aspirated/. (Vermeer and Sharma, p.4-5)

270 33 \$A /f-long/, /z/, /z-long/, /x-uvular/, and /gamma-uvular/ are characteristic for Urdu. Uneducated Hindi speakers replace them with /p-aspirated-long/, /d/z-hacek/, /d/z-hacek-long/, and /k-aspirated/ (for both uvulars), respectively. (Vermeer and Sharma, p.4-5)

270 36 \$A /s-hacek/ occurs in both Sanskrit and Persian loans. Replaced by /s/ in familiar speech. (p.31)

270 37 \$A [s-retroflex] is restricted to Hindi pronunciation of Sanskrit loans. (p.31)

270 38 \$A /z-hacek/ is found only in Persian loanwords in Urdu. Such loans are usually not used in Hindi. (p.32; V & S, p.4-5)

270 41 \$A /m-breathy voice/, /n-dental-breathy voice/, /l-breathy voice/ are limited to medial position. (p.28)

270 43 \$A /r-flap-retroflex-nasalized/ is found as a separate phoneme only in the pronunciation of loan words from Sanskrit by educated Hindi speakers who know that language. Uneducated Hindi speakers and all Urdu speakers replace it with /n-dental/. (p.36f; V & S, p.5)

270 44 \$A /glottal stop/ occurs only in Urdu. Corresponds to "ain," or rarely, "hamza," in Persian orthography. "Now very definitely a mark of affectation rather than elegance." (p.32f)

270 45 \$A Concerning /ash/e-glide-nasalized, o-open/o-glide-nasalized/ Kelkar (p.55) says the contrasts between nasalized higher-mid and lower-mid (here higher-low) vowels "are not firmly established." He restricts the higher-mid nasalized vowels to Hindi or Urdu social dialects, seeming to indicate that the standard Hindi-Urdu pronunciation has only the lower vowels (i.e. [epsilon] or [ash] nasalized). On the other hand, the nasalized vowels are supposed to be higher than the oral ones (see also p.24), so their quality is hard to determine.

270 46 \$A /iota-bar/ only occurs in Sanskrit loans after /r-trill/ or /l/. (p.52)

270 47 \$A /o-open-breathy voice/ occurs only as a variant of the sequence [epsilon-dot-h-voice.upsilon], and is either preceded or followed by [h-voice]. (p.49f)

270 48 \$A /alpha-unrounded/ occurs in English loans. (p.52)

270 60 \$A Voiced and breathy voiced stops and affricates are prenasalized after a nasalized vowel. (p.24)

270 61 \$A /d-retroflex, d-retroflex-breathy voice/ are realized as [r-flap-retroflex, r-flap-retroflex-breathy voice] intervocalically (except when /r-trill/ follows immediately in the next syllable), word finally, and adjacent to any consonant except /r-trill, v-approximant,

yod/ and the retroflex stops. (p.39f) This rule does not apply in some words of Sanskrit origin, usually when morpheme boundary directly precedes the retroflex. When the preceding vowel is nasalized /d-retroflex/ is realized as [r-flap-retroflex-nasalized]. No examples with the breathy voice counterpart. (p.41)

270 62 \$A [phi] is a free variant of /f/ adjacent to tautosyllabic back rounded vowels. (p.32)

270 63 \$A /m, m-breathy voice/ are realized as [beta-approximant-nasalized, beta-approximant-breathy voice-nasalized] intervocally in rapid speech. (p.24)

270 64 \$A [n-retroflex] is the formal pronunciation of /r-flap-retroflex-nasalized/. (p.36)

270 65 \$A /n-dental/ is retroflex before retroflex stops, palatal before palatal stops, and velar before velar stops. (V & S, p.22)

270 66 \$A [eng] occurs as an allophone of /g/ between a nasal vowel and a following nasal consonant. In rapid speech velar stops may be completely nasalized following a nasal consonant. (p.36)

270 67 \$A /l/ is nasalized in a syllable with a nasalized vowel. (p.38)

270 68 \$A According to Kelkar (p.53) consonantal constriction of /v-approximant/ is optional in the tonic syllable and before /epsilon-dot/, and presumably absent elsewhere. He gives environments for three different glides: [w, upsilon-glide, o-glide]. In view of the highly restricted environments, only [w] has been coded.

270 69 \$A /v-approximant, h-voice, yod/ are nasalized adjacent to a nasalized vowel. (p.38)

270 70 \$A /h-voice/ has a voiceless on-glide initially. (p.24) (It is not clear whether this means a voiceless [h]. V & S say that "h" is always voiced. (p.xi))

270 71 \$A The non-nasalized vowels are breathy voice before /h-voice/. In rapid speech vowel and /h-voice/ fuse into a single breathy voice unit. (p.25) These are interpreted as separate phonemes by Pinnow.

270 72 \$A /iota, upsilon/ are realized as [e, o] word finally in Urdu. (p.46f.) Hindi retains the higher vowel. Final short vowels are rare, restricted to a few monosyllables, and to Persian and Sanskrit loans.

270 73 \$A /ash/e-glide, o-open/o-glide/ may be realized as [ash-long, o-open-long] in Urdu pronunciation and as [epsilon-dot/e-glide, epsilon-dot/o-glide] in Hindi pronunciation. (p.55)

270 74 \$A /epsilon-dot/ is realized as [ash-breathy voice] before /h-voice/ plus consonant or word boundary. (p.50)

270 75 \$A /v-approximant/ is realized as [beta-approximant] before /o-long/. (p.53)